

Indiana Tech Flash

Volume 1, Issue 1

Indiana Tech Flash

Inside this issue:

Pike Central Recognized	2
Special Populations	3
For Classroom Use	4
FIRST Robotics Workshop	4
NASA News	5
Design Squad seeks quotes and photos	5
DOE links & Critical Thinking	6
Indiana Career Pathways	8
Resources for you	9

Special points of interest:

- * College GO WEEK
- * Google Pro 3D
- * E/TEI & IACTE State Conference
- * ITEEA National Conference
- * Motorsports Day
- * Useful links
- *

Welcome (to my world)

As I reflect on my nearly 17 years of teaching I think of the first days of a new school year. They are always filled with emotion. The anticipation of the new students in my classes would nearly send my stomach into a frenzy. Armed with my roster, Syllabus, and class rules I was ready. My feeling of new minds to mold, kept me motivated "to get to the good stuff." After all the students are wanting to absorb the mass amounts of information that I am going to share. (at least in my mind) They are so emotionally charges it is hair raising.

In my reflection I stopped to think "I bet there are a bunch of new teachers out there." My thoughts then traveled to my first day EVER teaching in ...1994. Boy, I wish I had had some

of the experiences I have now to help me.

So here is my thought.... whether you are a newbie teacher or a seasoned veteran there are some things that we may need to dig into subject such as "What makes for a successful teacher?" I found an article on that very topic and thought I would share.

Top 6 Keys to being a Successful Teacher

1. Sense of Humor
2. A Positive Attitutude
3. High Expectations
4. Consistency
5. Fairness
6. Flexibility

<http://712educators.about.com/od/teachingstrategies/tp/sixkeys.htm>

Now I realize that these are for every teacher BUT, what are some of the keys of success for an Engineer-

ing and Technology Teacher?

So I challenge you!! I want to know what things you do in your classroom to help your students be successful. What tips could you offer a new teacher? Or a seasoned teacher?

Areas of consideration:

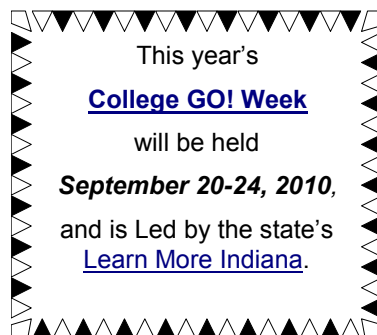
- Labs
- Tool organization
- Demonstrations
- Dealing with class disruptions
- Learning students names
- Student organizations

SEND me your thoughts

kmcgregor@doe.in.gov

I would love to compile a list for all to see.

Kelli



Pike Central is Recognized at Indiana State Board of Education Meeting

At Pike Central PLTW teacher Ray Niehaus and his students have been very active in the STEM areas. Ray and 9 students were recently selected as some of the 35 finalists from throughout the United States to participate in the Lemelson-MIT InvenTeams grant. They are going to design a disaster shelter that will set up in 30 minutes and last 6 months. The shelter will include water purification system and solar and Wind power.

Other teams of students participate in the Indiana Super Mileage Challenge. This year they placed 7th out of 55 teams with an impressive 490 miles to the gallon.

Pike Central team wins grant to develop disaster shelter

- DIANA KNOPINSKI STAFF WRITER / (812) 464-7510 knopinskid@courierpress.com
- Evansville Courier & Press

Ray's class is also working on:

- converting a Humvee from diesel to a diesel/electric-hybrid.
- working on a vehicle that is autonomous.
- participate in various robotics events and competitions.

If you would like to read more, use the URL at the bottom to go directly to the story!

**Congratulations Ray and
Pike Central Students**



From left to right, Willy Klueg, Jessica D'Esposito, teacher Ray Niehaus and C.M. Brown are part of the Pike Central team working to develop a prototype disaster shelter.

<http://www.courierpress.com/news/2010/jun/01/pike-central-team-wins-grant-to-develop-disaster/>

In Indiana, More Students Pursuing Majors With Good Job Prospects.

The [AP](#) (9/11) reports an increasing proportion of students are "selecting majors that will lead straight to a job after graduation and not into a field riddled with layoffs and unemployment," according to higher education officials in Indiana. "More students are

choosing careers in the medical, legal and technology fields, often being recruited by companies before they pass their final exams and graduate, said Scott Neal, Franklin campus director for Ivy Tech Community College."



Advisory Panel to Offer Obama Ideas for Advancing STEM Education

The importance of STEM education is getting emphasize from the White House as well as from academia. The importance of our children being STEM literate is crucial for the future of our communities and our nation.

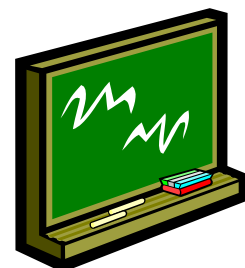
Click the link to an article

from September 16th education week publication which spells out what the President's STEM advisory board is recommending. with all of your organizations and associates.

[Advisory Panel to Offer Obama Ideas for Advancing STEM Education - Curriculum](#)

September 16, 2010
EDUCATION WEEK

<http://www.edweek.org/ew/index.html>



Special Populations- Information

National Institute
for Women in
Trades, Technology
and Science

Helping educators close the gender gap for women in technology

<http://www.iwitts.org/>



Need more women in your technology classes?



You can do it! IWITTS can help.

To Order Posters for your classroom or Career Center go to:

<http://www.iwitts.org/store/recruitment-products/posters?view=category>

I pose a question: how do we increase and retain special population students? To quote an article called *Girls Gone Wild--For Science!* By Barbara Axelson... "We've made a lot of progress toward [gender] equity in our country, but it's still not perfect."

From my research it appears that we (educators & parents) need to be aware of the sights and sounds that students are seeing in daily life. Making sure that textbooks, posters and other literature are loaded with pictures depicting people of all gender, abilities, and ethnic background in careers and situations that are not "stereotypical".

Making a genuine effort to reach out to students to show the opportunities in STEM (Science, Technology, Engineering and Math) related careers is a huge key to success. Project-based learning is a way that can increase and retain students' interests in careers in engineering, IT, Science, and math



Great Lakes Girls Collaborative Project

Where Are The Girls" STEM Education and Careers, a summit for stakeholders, policy makers and leaders in education, government, business, and the community dedicated to fostering girls' participation in science, technology, engineering & mathematics (STEM) fields, will be held Thursday, September 30, 2010 at

**Indiana State University,
Myers Technology Center**

BACK TO SCHOOL: 5 Myths about Girls and Science

1. From the time they start school, most girls are less interested in science than boys.
2. Classroom interventions that work to increase girls' interest in STEM run the risk of turning off boys.
3. Science and math teacher are no longer biased toward their male students.
4. When girls just aren't interested in science, parents can't do much to motivate them.
5. At the college level, changing the STEM curriculum runs the risk of watering down important "sink or swim" coursework.

http://www.nsf.gov/news/news_summ.jsp?cntn_id=109939

Google Sketch Up Pro—FREE

Google is offering Indiana schools free licenses to Google Sketch Up Pro, a 3D modeling application for engineering, architecture, and design. License and installation information is available immediately to school administrators through the online community Google Geo Education in the Learning Connection. This community will be available to Indiana educators to support use of Google Sketch Up and Google Earth within the class-

room. Licenses are obtained by sending a request [to join the Google Geo Education community in the Learning Connection](#). Members will be able to download license keys and instructions for installation across single machines as well as network labs. Licenses are available for both Mac and Windows operating systems.

Learning Connection

<https://learningconnection.doe.in.gov>

Google Sketch Up Pro

Google SketchUp

Home
Products
Downloads
Buy
Community
Education
Training
Help

3D modeling for everyone

"SketchUp is the finest (and most innovative) tool available for anyone designing anything from coffee pots to skyscrapers."
— McCall & Associates

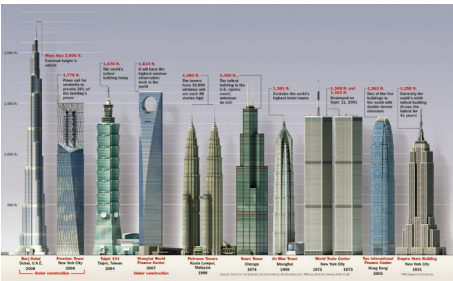


For Classroom Use

Tall Buildings

Presents a focused study of 25 tall buildings. These projects from around the world address the most current issues of building tall: safety, structural soundness, and sustainability.

http://www.moma.org/interactives/exhibitions/2004/tallbuildings/index_f.html



DESIGN A HOME WITH FRANK LLOYD WRIGHT

On this Website you can design and build a home, learn about architects' past, present and future.

<http://www.architectstudio3d.org/AS3d/home.html>



Engineering .Com provides many resources. One is the engineering games section. TRY IT!

<http://www.engineering.com/GamesPuzzles/MagicPen2.aspx>



How Deep-sea Rescue Works

Imagine being trapped in a submarine 3,000 feet below the surface of the ocean. It's no 20,000 leagues under the sea, but it's still too far for someone to swim down and save you. That's where deep-sea rescue comes.

For many more how stuff work go to:

<http://www.howstuffworks.com/>

The Best Inventions of 2010
<http://www.foxnews.com/scitech/2010/05/20/best-inventions-year/>



NEED
an alternate
energy
unit?

Check out this site for ideas and curriculum!!

The NEED Project is to promote an energy conscious and educated society.

<http://www.need.org/node/68/#Secondary>

Wall Street Journal Offers Guide To College Resources.

<http://online.wsj.com/public/page/rankings-career-college-majors.html>

As part of its "Path to Profession" series, the [Wall Street Journal](#) (9/13) reports an interactive slideshow on 12 career paths that are ranked highly in terms of salary, future growth and job satisfaction. Among these jobs listed are finance, healthcare, government, information technology, engineering, product management, business operations and sales. Each slide includes a brief description of the type of person who might find the field satisfying, and a link to a larger article on that particular occupation.

PATHS TO PROFESSIONS | SEPTEMBER 13, 2010

A Career in Engineering

Follow the link to an article that might help your students look at Engineering as a career.

http://online.wsj.com/article/SB10001424052748703946504575469820272216004.html?mod=WSJ_article_MoreIn_CollegeRankings

NEED a Resource for Package design

TRY

Marketing and Package Design Trends

This document was prepared to share a point of view of what we at Advisium Group think will be the New Product Development trends for 2010 in West Europe and the USA.

http://www.advisium.net/img/Consumer_Goods_Product_Innovation_2010.pdf



NASA News- Emerging Technologies May Fuel Revolutionary Launcher



As NASA studies possibilities for the next launcher to the stars, a team of engineers from Kennedy Space Center and several other field centers are looking for a system that turns a host of existing cutting-edge technologies into the next giant leap spaceward.

An early proposal has emerged that calls for a wedge-shaped aircraft with scramjets to be launched horizontally on an electrified track or gas-powered sled. The aircraft would fly up to Mach 10, using the scramjets and wings to lift it to the upper reaches of the atmosphere where a small payload canister or capsule similar to a rocket's second stage would fire off the back of the aircraft and into orbit. The aircraft would come back and land on a runway by the launch site.

Engineers also contend the system, with its advanced technologies, will benefit the nation's high-tech industry by perfecting technologies that would make more efficient commuter rail systems, better batteries for cars and trucks, and numerous other spinoffs.

It might read as the latest in a series of science fiction articles, but NASA's Stan Starr, branch chief of the Applied Physics Laboratory at Kennedy, points out that nothing in the design calls for brand-new technology to be devel-

oped. However, the system counts on a number of existing technologies to be pushed forward.

"All of these are technology components that have already been developed or studied," Starr said. "We're just proposing to mature these technologies to a useful level, well past the level they've already been taken."

For example, electric tracks catapult rollercoaster riders daily at theme parks. But those tracks call for speeds of a relatively modest 60 mph -- enough to thrill riders, but not nearly fast enough to launch something into space. The launcher would need to reach at least 10 times that speed over the course of two miles in Starr's proposal.

The Advanced Space Launch System is not meant to replace the space shuttle or other program in the near future, but could be adapted to carry astronauts after unmanned missions rack up successes, Starr said.

A rail launcher study using gas propulsion already is under way, but the team is applying for funding under several areas, including NASA's push for technology innovation, but the engineers know it may not come to pass.



Magnetic Levitation (MagLev) System evaluated at NASA's Marshall Space Flight Center.

The effort is worth it, however, since there is a chance at revolutionizing launches.

"It's not very often you get to work on a major technology revolution," Starr said.

Steve Siceloff
Kennedy Space Center

For the entire article go to <http://www.nasa.gov/topics/technology/features/horizontallaunch.html>

DESIGN SQUAD

PBS's *Design Squad* is seeking quotes and photos from teachers using *Design Squad* in their classrooms. Your submission may be selected for use in a series of articles to be published in ITEEA's *The Technology and Engineering Teacher* magazine. All submissions are welcome! We are particularly interested in hearing positive experiences from teachers and seeing photos of students engaged in the following activities:

**Kick Stick
On Target
Helping Hand
Harmless Holder
Sky Glider**



E-mail your submissions to margot.sigur@wgbh.org (Please put "ITEEA" and "Design Squad" in the subject line of the e-mail.)

Or post them to Facebook at: <http://www.facebook.com/pages/Design-Squad/#!/pages/Design-Squad/62328461927?ref=ts> (You'll have to become a fan first!)

We look forward to finding out more about your experiences with *Design Squad*!

WELCOME TO THE IDOE— pages of interest



There are many times that I get asked where is? Often times I direct that question to the Department of Education website. In this section I have highlighted several areas that you might need throughout the year. If you can think of any others to be added please send an email.

General Education Links

INDIANA DEPARTMENT OF EDUCATION

<http://www.doe.in.gov/>

INDIANA APPROVED COURSE TITLES

<http://www.doe.in.gov/publications/courses.html>

TEACHER LICENSE—look up

<http://dc.doe.in.gov/public/EducatorLookup/TeacherInquiry.aspx>

TEACHER LICENSE—renewing or adding

<http://www.doe.in.gov/educatorlicensing/>

Engineering and Technology Education Links

ETE—general

<http://www.doe.in.gov/octe/technologyped/>

TECHNOLOGY EDUCATION STANDARDS

<http://dc.doe.in.gov/Standards/AcademicStandards/PrintLibrary/technology.shtml>

ETE CURRICULUM MODEL w/ links

http://www.doe.in.gov/octe/technologyped/curriculum_model.html

DUAL CREDIT

<http://www.doe.in.gov/octe/technologyped/dualcredit.html>

INDIANA COLLEGE AND CAREER PATHWAYS

<http://www.doe.in.gov/pathways/>

COLLEGE AND CAREER PREPARATION

<http://www.doe.in.gov/octe/>

SUPER MILEAGE CHALLENGE-IMSTEAD

<http://www.doe.in.gov/octe/technologyped/>

VIDEOS

Cool stove of the future

Stoves have been around for a long time. Not many changes. How can the stove be improved? This radical stove concept will totally amaze you. You'll definitely want one of these in your kitchen! If your school will not allow you to pull up YouTube – please email this to your home and enjoy!

http://www.youtube.com/watch?v=2wBe3SDCcz8&feature=player_embedded

Gina car

BMW has come up with something as strange as it is innovative — a shape-shifting car covered with fabric.

Read More <http://www.wired.com/autopia/2008/06/bmw-builds-a-ca/#ixzz0znJ1oa9p>

Video link

<http://www.youtube.com/watch?v=0pwabDeqVi8>



Honda Advertisement

After 606 takes the Rube Goldberg like commercial was completed. No computer graphics were used. It took 3 months and 6 million dollars to make this 2 minute commercial.

<http://www.youtube.com/watch?v=ve4M4UsJQo>

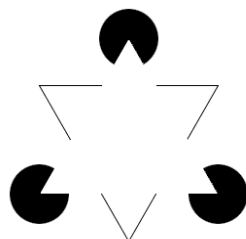
Which is faster?

Jay Leno test which is faster Texting vs. Morse Code

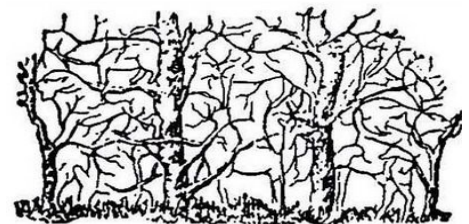
<http://videosift.com/video/Ham-Radio-Morse-Code-vs-Text->

Critical thinking with Optical Illusions

As teachers, we are constantly asking our students to think critically, be creative, and “think outside the box.” As with all areas of academia, students need practice on thinking. We need to challenge students to identify and reconsider some of their basic assumptions about how the world




works and how it should work. This is not an easy task. So consider using brain teasers, puzzles, optical illusion to spur that critical thinking at the beginning of your class period. Here are a couple to get you started.



How many animals do you see?


Motor Sports Day @ IUPUI



Motorsports Day
October 13th, Taylor Hall Courtyard
(815 W. Michigan Street)

9:30am	Registration Opens
10:00am-11:00am	Tour of Campus
11:00am-2:00pm	Motorsports Day Activities
12:00pm-1:30pm	Sarah Fisher, <i>special appearance by</i> IZOD Indy Car Series Driver/Owner

Learn about the Motorsport Engineering Degree Program
Meet students and faculty
Visit interactive displays by the IZOD Indy Car Series
See various race cars!





INDIANA COLLEGE AND CAREER PATHWAY

A **CAREER CLUSTER** is a way of organizing a group of closely related career pathways, as identified by industry and education leaders and other stakeholders. Career Clusters identify a common core of knowledge and skills, both academic and technical, for a broad career cluster that will allow all learners to pursue a wide range of career pathways.

They will provide opportunities from entry level through management and professional levels. The organization and structure of Career Clusters provides a



place for all learners, linking them to their career goals. Indiana uses the [16 national Career](#)

[Clusters](#) to organize

QUOTES

Engineering:

The ideal engineer is a composite... He is not a scientist, he is not a mathematician, he is not a sociologist or a writer, but he may use the knowledge and techniques of any or all of these disciplines in solving engineering problems."

— N.W. Dougherty 1955

Technology:

If we teach today the way we were taught yesterday, we aren't preparing student for today or tomorrow.

-Unknown

Education/teaching:

To repeat what other have said requires education; to challenge it, requires brains.

-Mary Pettibone Poole, *A Glass Eye at a Keyhole*, 1938



[Brighton based designer specialising in hand crafted models, prop styling and art direction](#)

Ideas for teaching content related to design, technology communication and more are shared!



What's new in Engineering

<http://www.discoverengineering.org/>

Cool Stuff!!



NATIONAL ENGINEERS WEEK FOUNDATION OPENS REGISTRATION FOR 19th ANNUAL FUTURE CITY® COMPETITION

Students from Nearly 40 Regions Across The Country To Be Tasked With Engineering, Designing and Developing Virtual and On-Site Health Care Systems for Clinics and Hospitals of Future Generations

2011 Future City National Finals
February 18th—22nd

<http://www.futurecity.org/>



State Conference




State Conference Registration

Friday, September 24 & Saturday, 25, 2010
 Indiana Association Of Career & Technical Educators
 Engineering/Technology Educators Of Indiana

Sponsored By: 

Registration <http://www.etei.net/registration-hotel2.pdf>

National Conference *Get the latest STEM Education news and updates - FREE.*



Sign up for "STEM Connections" at

<https://www.iteea.org/Forms/STEMconnectionsform.htm>

Follow ITEEA on Twitter and Facebook.

Go to www.iteea.org/Networking/networking.htm

Start planning now !!

ITEEA's 73rd Annual Conference
Minneapolis, MN
March 24- 26, 2011

<http://www.iteea.org/Conference/conferenceguide.htm>



To join ITTEEA, Click [How to Join/Renew](#)

Here's a sampling of
 what's available in the
 Sept issue of
Technology and

NEW!! Design Squad - Pop
 Fly: Hands-On Challenge

Wind Power: An Emerging
 Energy
 Resource

Design Challenge:
 Rooftop Garden

Preferences of Male and Fe-
 male Students for TSA
 Competitive Events

Advancing STEM Education:
 A 2020 Vision

2010 Supermileage Compe-
 tition Photos



TECHFLASH

Kelli J. McGregor

Engineering and Technology Specialist
College and Career Preparation
Indiana Department of Education

151 West Ohio Street
Indianapolis, IN 46204
Phone: 317-232-6990
Email: kmcgregor@doe.in.gov

[http://www.doe.in.gov/
octe/technologyed/](http://www.doe.in.gov/octe/technologyed/)

Schedule of Events

- * September 24-25 — Indiana ETEI & ACTE conference in Indianapolis
- * September 30—GLGC @ISU
- * October 1st—All Listservs go to Learning Communities
- * October 1st—National Lab Day entries due
- * October 13th—IUPUI Motor Sports Day
- * Innovation Summit— October 20th-22nd
- * LEGO Education TETRIX Workshop—October 22 IUPUI
- * October 29th—IMSTEA letter of Intent due
- * November 2nd—PLTW Counselor's Conference
- * National ITEEA conference—March 24 –26th

Links

Techdirections

is a magazine and website for technology, career/technical, and applied science education.

Expanded Digital Edition now available. Click to view.

For the free subscription form, click here.



<http://pbskids.org/dragonflytv/>



**Engineers Week 2011
is February 20-26**

<http://www.eweek.org/Home.aspx>



<http://www.istemnetwork.org/index.cfm>

ASEE's eGFI brand platform!

Creative Education Publication, Web Site and E-newsletter Inspire America's Engineers of Tomorrow

ASEE continues to enhance its eGFI brand. Highlighting the eGFI brand platform is the 4th edition of eGFI - Engineering, Go For It. eGFI is the colorful, inspiring magazine designed to attract middle-school and high-school students, particularly minorities and young women, and their parents, teachers and counselors to the exciting world of engineering and technology. Published bi-annually, eGFI has reached over 1.7 million K-12 readers since its inception in 2003.

<http://www.egfi-k12.org/>

Indiana Project Lead The Way

IN-PLTW website aimed to provide help to teachers, administrators, parents, and students find information about PLTW.

<http://www.tech.purdue.edu/pltw/index.html>



[https://learningconnection.doe.in.gov/
Login.aspx](https://learningconnection.doe.in.gov/Login.aspx)



**Engineering/Technology
Educators of Indiana**

<http://www.etei.net/index.html>

IACTE

<http://www.doe.in.gov/octe/facs/IACTE>



<http://www.iteea.org/EbD/Resourses/EbDresources.htm>